

### **Amendments to the Claims:**

Please replace the present claims with the following amended set of claims.

### **Listing of Claims:**

Claims 1-10 (Cancelled)

11. (Currently Amended) An implant of titanium to be surgically implanted in living bone, comprising:

a threaded portion for engaging bone; and

a metal surface from which a native oxide layer had been substantially removed with minimum consumption of said metal surface and without contacting said metal surface with non-titanium particles and thereafter acid etched to produce a substantially uniform array of irregularities having peak-to-valley heights not greater than about 10 microns, said acid etched surface being located on at least a part of said threaded portion.

12. (Previously Presented) An implant of claim 11, wherein said irregularities include cone-shaped elements.

13. (Currently Amended) An implant of claim 11, wherein said native oxide is removed by a first acid solution after which the resulting surface is etched with a second acid solution to create said substantially uniform array of irregularities.

14. (Previously Presented) An implant of claim 13, said first acid solution is aqueous hydrofluoric acid.

15. (Previously Presented) An implant of claim 13, wherein said second acid solution is a mixture of sulfuric and hydrochloric acids.

16. (Currently Amended) An implant of claim 11, wherein said implant has a lowermost end, said acid etched surface being located on said threaded portion from said lowermost end to at least beyond the three uppermost turns turn of said threaded portion.

Claims 17-50 (Cancelled)

51. (Currently Amended) A ~~titanium metal~~ dental implant made of titanium metal, comprising:

a smooth head portion for receiving a dental restoration component;

a lowermost end opposing said head portion;

a threaded portion for engaging bone between said head portion and said lowermost end;  
and

a roughened region for facilitating osseointegration with said bone ~~and being~~ located on a ~~part of~~ said threaded portion and extending to said lowermost end of said implant, said roughened region being uniformly acid etched with a second acid solution after a native oxide layer had been removed by contact with a first acid solution with minimum consumption of said titanium metal and without contacting said titanium metal with non-titanium particles to produce a substantially uniform array of irregularities having peak-to-valley heights not greater than about 10 microns; ~~wherein said head portion includes a top surface, said roughened region beginning at a point about 3 mm below said top surface.~~

Claims 52-56 (Cancelled)

57. (Previously Presented) An implant of titanium to be surgically implanted and osseointegrated with living bone comprising a threaded portion for contact with said bone, said threaded portion being roughened by removing substantially all the native oxide from said titanium with aqueous hydrofluoric acid and thereafter etching the titanium surface with a mixture of aqueous sulfuric and hydrochloric acids to produce said roughened threaded portion, said roughened threaded portion having an array of irregularities having peak-to-valley heights not greater than 10 microns.

58. (Previously Presented) An implant of Claim 57 wherein said aqueous hydrofluoric acid has a concentration of about 15 wt % hydrofluoric acid.
59. (Previously Presented) An implant of Claim 57 wherein said aqueous mixture is about two parts of 96 wt % sulfuric acid and about one part of 37 wt % hydrochloric acid.
60. (New) A titanium metal dental implant of Claim 51, wherein said first acid solution is aqueous hydrofluoric acid.
61. (New) A titanium metal dental implant of Claim 51, wherein said second acid solution is a mixture of sulfuric and hydrochloric acids.
62. (New) A titanium metal dental implant of Claim 51, wherein said irregularities include cone-shaped elements.
63. (New) A titanium dental implant, comprising:  
a head portion for receiving a dental restoration component, said head portion including a non-rotational feature for engaging said dental restoration component, said head portion having a smooth machined surface;  
a lowermost end opposing said head portion; and  
a threaded portion having continuous thread turns and being located between said head portion and said lowermost end, said threaded portion including a self-tapping region adjacent to said lowermost end, said threaded portion having an acid-etched surface for facilitating osseointegration with said bone, said acid-etched surface extending to said lowermost end of said implant and within said self-tapping region, said acid-etched surface being produced on said threaded portion after a native oxide layer has been removed from said threaded surface without impacting said threaded portion with non-titanium particles, said acid-etched

surface having a uniform array of irregularities having peak-to-valley heights not greater than about 10 microns, said irregularities including cone-shaped elements.

64. (New) The implant of claim 63, said acid-etched surface is located on said threaded portion below the first uppermost turn of said threaded portion.

65. (New) The implant of claim 63, wherein said native oxide is removed by a first acid solution after which the resulting surface is etched with a second acid solution to create said acid-etched surface.

66. (New) The implant of claim 65, said first acid solution is aqueous hydrofluoric acid.

67. (New) The implant of claim 66, wherein said second acid solution is a mixture of sulfuric and hydrochloric acids.

68. (New) A titanium dental implant, comprising:  
a head portion for receiving a dental restoration component, said head portion including a non-rotational feature for engaging said dental restoration component;  
a lowermost end opposing said head portion; and  
a threaded portion having continuous thread turns and being located between said head portion and said lowermost end, said threaded portion including a cylindrical section and a tapered section immediately adjacent to said lowermost end, said cylindrical section being longer than said tapered section, said tapered section including a self-tapping region that extends to said lowermost end, said threaded portion having an acid-etched surface for facilitating osseointegration with said bone, said acid-etched surface extending from said lowermost end and into said cylindrical section of said threaded portion, said acid-etched surface being produced on said threaded portion after a native oxide layer has been removed from said threaded portion, said acid-etched surface having a uniform array of

irregularities having peak-to-valley heights not greater than about 10 microns, said irregularities including cone-shaped elements.

69. (New) The implant of claim 68, said acid-etched surface extends from said lowermost end to at least an uppermost turn of said threaded portion.

70. (New) The implant of claim 68, wherein said native oxide is removed by a first acid solution after which the resulting surface is etched with a second acid solution.

71. (New) The implant of claim 70, said first acid solution is aqueous hydrofluoric acid.

72. (New) The implant of claim 70, wherein said second acid solution is a mixture of sulfuric and hydrochloric acids.

73. (New) The implant of claim 68, further including a neck portion between said head portion and said threaded portion.

74. (New) The implant of claim 73, wherein said neck portion is a smooth machined surface, said head portion having a smooth machined surface;

75. (New) The implant of claim 68, wherein said head portion has a smooth machined surface.